

Testimony on the Effects of Understaffing at Air Traffic Control Facilities
Melvin S. Davis
Facility Representative and Certified Professional Controller
Southern California TRACON
House Transportation and Infrastructure Committee
Subcommittee on Aviation
Wednesday, June 11, 2008

My name is Melvin S. Davis; I am an air traffic controller with the FAA. I have been an active air traffic controller for 22 years. I learned my trade in the United States Marine Corps. I worked at the Los Angeles Airport Traffic Control Tower for 10 years. I have worked the in the Los Angeles Arrival Area at the Southern California TRACON for 9 years. I have worked in both the high density tower and high density terminal RADAR approach control environments. I have experienced many different situations that uniquely prepare me for this testimony.

The FAA will tell you that a reduction in staffing does not affect safety. After a certain point that statement is completely false. Air traffic control facilities generally handle the same amount of traffic on a day to day basis. A slight reduction in staffing can be absorbed for short periods of time. However, significant reductions in staffing for prolonged periods of time have had a devastating affect on safety. For example, at Los Angeles International Airport in 1991 there was a horrific accident that took the lives of 34 innocent victims. During the in-depth review of the accident it was noted that the facility had been deeply short staffed for a significant period of time preceding the accident. The night of the accident the controller was working alone. The controller had been certified at the facility for less than one year and had less than three years in the FAA. The controller had documented performance deficiencies that went uncorrected. This is the exact same scenario that has developed at the Southern California TRACON. In the last four years the facility has lost over 2000 years of experience and certified 6 new controllers. The FAA is asking a tired, drained and disenfranchised workforce to pass the baton to the new generation with little to no safety margin.

As our veteran workforce reaches retirement eligibility the effort to pass the baton has begun to late. In the past a new developmental controller would be assigned to a crew of seasoned veterans. The ration would usually be 6 veterans to 1 developmental. Now it is common for the ration to be 3 veterans to 3 or more developmentals. In times of crisis, which occur daily at my facility, there is no one with experience to turn to. The controllers are in survival mode.

In the past four years the facility has experienced a reduction in CPCs from 261 to less than 160. The use of operational overtime has increased from \$250,000 to \$4 Million an increase of 1600%. The facility has experienced an increase of operational errors of 400%. Although the FAA does not make official reports I can tell you that the number of TCAS-RAs has increased significantly. This is a situation where two aircraft take action

to separate themselves for various reasons. I believe that this is another indication of the deteriorating health of the system.

My facility handles 2.2 Million aircraft operations per year. The controllers continue to move those aircraft through the Southern California airspace regardless of the odds against them. This is what makes or breaks a controller. Get the job done. However, in spite of the fact that most controllers feel invincible sooner or later we make mistakes.

Air traffic controllers are naturally mission oriented. To survive in the ATC environment a controller has to be able to set aside the external factors that impact the day to day operation. As staffing has dwindled at the facility the controllers look at it as one more hurdle to accomplishing the mission. However, there comes a point of no return. Recently, one veteran controller walked into my office after having experienced a traumatic situation. As this controller explained the situation he broke down in tears and said, "I have lost it". This individual is eligible to retire and has several more years left until the mandatory retirement age. Yet due to the increased demands placed on him by the FAA he is done. He may never return to active controlling of aircraft.

The primary responsibility of each air traffic controller is to prevent the collision of an aircraft with another aircraft or terrain. This safety mandate is followed closely by a need to maintain efficiency within the system. Air traffic controllers carefully and constantly balance these two competing demands minute by minute. The competing demands cause each controller to make decisions based on measured risks.

It is widely accepted that the human element is the element most prone to failure within the National Airspace System. Both on the flight deck of any commercial airliner or in the air traffic control facilities nationwide federal regulators have long mandated redundancy of the human element. One person performs that task while another equally qualified person monitors the task and assists when necessary.

In the typical air traffic control facility work is divided between primary control positions and assistant control positions. On any given day an air traffic controller would work a mix of primary and assistants positions during a normal shift.

As staffing decreases the automatic reaction is to reduce the amount of time controllers are assigned to the assistant positions. This eliminates the redundancy provided by an extra set of eyes and ears, which reduces safety. This further eliminates the ability of one person to accomplish all of the tasks assigned to the position, which reduces capacity. Similarly, this increases the amount of time the remaining controllers spend actively controlling air traffic. This leads directly to increased fatigue, which in turn exacerbates the rest/recovery process.

In a normal environment this reduction of the use of assistant control positions would be detected and corrected by the assignment of additional personnel to the facility to re-balance the staffing versus workload. However, as the staffing at the Southern California TRACON began to diminish new assignments did not materialize. In 2004

the facility had 260 fully certified controllers to work 2 million aircraft through 42 RADAR sectors. That year the facility used \$250,000 of operational overtime. The facility experienced about 10 operational errors that year.

The FAA is caught in a downward spiral that is irreversible. As the conditions deteriorate the attrition increases. As the attrition increases the conditions deteriorate further, perpetuating the problem. If the FAA acted immediately to reverse this negative trend it would take years to recover. However, with the current attitude displayed by the senior leadership this may take a decade to recover from. Exactly two weeks ago in a face to face meeting the FAA ATO VP for Terminal Operations, Bruce Johnson, told me, "I am afraid that if we reverse course now things will only get worse. Why don't we wait another year and see where we are at then". The problem with statements like these is that these individuals are the people that the appointed leadership looks to for advice. If the advice hasn't worked in the past then it probably won't work in the future.

Every day I sit next to controllers who show the signs of accumulated fatigue. The stress and strain of the extended overtime and increased demand manifests itself in visible physical changes. There are constant bags under our eyes. There is an increase in the use of sick leave due to the fatigue.

The air traffic control environment in and around most major airports is defined as the terminal environment. Staffing ATC facilities within the terminal environment has historically been accomplished through a farm club approach, to use a baseball term. The vast majority of new controllers started at a low level facility and learned the tools of the trade. Quite naturally some progressed through the mid-level facilities and a large group progressed to the high-density facilities. Generally, the high-density facilities are located in high cost of living areas.

A certain amount of the workforce stopped at the mid-level facilities and spent a significant amount of their career there. These controllers did so knowing they would earn mid level pay knowing someday that they would transfer to the highest-level facility to maximize their annuity calculation just in time to retire. This decision was due to a nuance of the traditional government retirement system called the high three-annuity calculation. Unfortunately due to the labor issues associated with the imposed pay bands this incentive no longer exists. Those experienced mid level controllers have no incentive to transfer a high-density facility. Due to a 30% reduction in the air traffic control pay bands a move for one of these veterans to a high density facility is now a lateral move. This action by the FAA leaves a significant positive influence on the system on the sidelines. Without a realistic incentive, veteran controllers will not risk moving up in the system when it is cost/pay neutral. An additional impact of the imposed pay bands means those controllers currently at a high-density facility no longer have an incentive to stay.

The mission of the air traffic control system is loosely defined by two major initiatives:

Safety and Efficiency

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As staffing decreases the automatic reaction is the reduction or elimination of the time controllers are assigned to the assistant positions. This eliminates the redundancy provided by an extra set of eyes and ears, which reduces safety. This further eliminates the ability of one person to accomplish all of the tasks assigned to the position, which reduces capacity. Similarly, this increases the amount of time the remaining controllers spend actively controlling air traffic. This leads directly to increased fatigue, which in turn exacerbates the rest/recovery process.

In a normal environment this reduction of the use of assistant control positions would be detected and corrected by the assignment of additional personnel to the facility to re-balance the staffing versus workload. However, as the staffing at the Southern California TRACON began to diminish new assignments did not materialize. In 2004 the facility had 260 fully certified controllers to work 2 million aircraft through 42 RADAR sectors. That year the facility used \$250,000 of operational overtime. The facility experienced about 10 operational errors that year.

As staffing continued to decrease the next reaction was to increase the use of operational overtime. In 2005 the facility doubled the use of overtime to \$500,000. There were still not a significant number of new developmentals assigned to the facility. In 2005 the facility experienced 21 operational errors, a 100% increase.

In late 2006 the first group of new developmental controllers began arriving at the Southern California TRACON. I do not have accurate data to determine the amount of overtime used. The facility experienced 19 operational errors in 2006.

In 2007 the facility began to experience the added burden of training the new developmentals. This burden combined with the extended use of overtime and the reduction of the use of assistant controllers. By the end of 2007 the number of fully

certified controllers had dropped to 160, a 45% reduction from 2004. In 2007 the facility used \$4 million dollars of overtime, a 1600% increase from 2004. The facility experienced 31 operational errors, a 300% increase from 2004.

The trend for 2008 shows no sign of improvement. The use of overtime is increasing, the operational errors are increasing and the certification of new controller's does not meet the amount of attrition of the current controllers. So far in 2008 the facility has certified 3 new controllers and lost more than 10 veterans. The facility has experienced 27 operational errors this year, a trend that would end the year with over 40. It is worth noting that during this time frame the FAA reduced the bubble of protective airspace around each aircraft that triggers an operational error, yet the number of errors continues to increase.

This insidious creep of the trend data clearly indicates to me that the system is neither safe nor efficient. The facility continues to handle the same 2 million operations per year and has not had a catastrophic accident yet. However, that is no insurance policy against the inevitable.

At the Southern California TRACON the negative impacts of performing more work by less people is further enhanced by the average age of the workforce. The controllers' average age is 50 and average years of experience are 20. The positive factor of experience is offset by the increased impacts of accumulated fatigue and reduced stamina.

Earlier I mentioned the competing demands of safety versus efficiency. A controller has very few options for dealing with these reductions in personnel. To maintain safety the only option is to reduce efficiency. If I cannot keep track of all my planes safely then I need to limit the amount of planes I take responsibility for. Sometimes, this decision leads to delays. A delay is defined by the FAA as lasting more than 15 minutes. Far more often aircraft are delayed for short periods of time that are defined as no-notice holding. As a controller at one sector reaches capacity aircraft are told to wait at the previous sector until there is room. I believe the FAA has a system for tracking no-notice holding but does not report the data externally. Another tool available for limiting capacity is the reduction of extra services. While this category of service does not receive the fanfare the rest of the system gets it is still a vital element. To build the skills necessary for piloting jobs students must practice. Yet practice is immediately cut when capacity exceeds demand.

Occasionally a controller overestimates his or her ability and accepts responsibility for more aircraft than they can safely handle. This may result in an operational error. Far more often though this results in a TCAS-RA. TCAS is defined as Traffic Collision Avoidance System and it provides a Resolution Advisory when it detects an imminet collision between two aircraft. I can state emphatically that the number of TCAS-RAs has increased dramatically. Again, I believe that the FAA has a system for collecting data on TCAS-Rs but does not report it externally.

As I deliver this testimony to you 42 air traffic controllers are eligible for retirement. That would leave the Southern California TRACON with about 100 controllers to accomplish the work of 261 controllers 4 years ago. The FAA has begun introducing incentives in a haphazard manner over the last several months. These incentives are too little and have begun too late. It is nearly impossible to account for the 2000 years of lost knowledge.